MISC - Fireproofing

A-11176

MEMORANDUM

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REFER		NOTED	
TO	DATE	BY	DATE
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TO: Herbert A. Tessler, Supervisor, Functional Coordination
FROM: Irv Soffer
DATE: July 27, 1965
SUBJECT: World Trade Center - Fireproofing of Exterior Columns - U.S.S. Demonstration
REFERENCE:
COPY TO: Messrs. Levy, Feld, Panero

On July 26, 1965, I attended a demonstration of fireproofing the exterior columns of the World Trade Center. This test was sponsored by the U. S. Steel Co. and was held at the plant of the E. B. Carley Co. in Astoria, Long Island. The following were present:

D. LaVorene - USS -ABD - NYC
M. D. Corner - USS - ABD - Pitts.
M. B. Zeitlin - USS - Research Center, Monroeville, Pa.
E. B. Carley - E. B. Carley Co. NYC
I. Soffer - WTC Planning Division
J. Solomon - ERS

This demonstration illustrated the procedure for applying a spray-on fireproofing between the stainless steel exterior skin and the exterior columns. The mock-up was fabricated by the U. S. Steel Co. and sent to E. B. Carley Co. for tests. The simulated exterior column was fabricated with sheet metal and the exterior skin was plexiglass. There were two of these models built (see attached photos).

The E. B. Carley Co., who are plastering contractors and sole distributors of "Limpet" in this country, decided to try this material. Limpet contains asbestos fibres vs. the competitive products that contain mineral wool with asbestos fibres. A nozzle for the spray-on was temporarily rigged for use in this column and skin configuration tests.

The purpose of the test was to determine the feasibility of spraying the Limpet between the steel columns and metal skin enclosure. The actual application that was tried appeared to be inadequate, because the position and shape of the nozzle could not reach all the areas behind the column. The straight nozzle that was used was inserted along the sides of the column and moved up and down, in the attempt to fill the front and sides of the column jacketing. By observation through the plexiglass it was obvious that the spray-on fireproofing did not reach all the areas, because voids could be seen. This condition would probably be untenable when the opaque material was used to cover the column, and there would be no way to observe the amount of fireproofing that was being installed on the job site.

I indicated to the U. S. Steel Co. representatives that this test was unsatisfactory. They said they will perform another one in about four or five weeks. They will redesign the nozzle and we will review the design with them. Apparently, the parent company (Limpet) in England supplies engineering services to the E. B. Carley Co. in New York.

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Limpet can be mixed with an adhering and hardening admixture called TS-2, which can result in a much better spray-on. This can be done at a nominal additional cost. The material containing this admixture will be demonstrated at the next test.

It might be that the best approach to the column and spandrel fireproofing would be a spray-on prior to erection of exterior skin and hardware. We are not yet certain that the proposals for a pre-cast or premolded column jacket will be successfully and economically developed for World Trade Center. We are certain at this time, however, that we can obtain a sprayed-on material that will give a durable service to resist construction abrasion including moisture resistance, as demonstrated by other companies.

Irv Soffer
World Trade Center Planning

IS:jw
att.